



Understanding the Early Years
▲
Early Childhood Development
in Hampton/Sussex, New Brunswick

KSI Research International Inc.
Applied Research Branch
Strategic Policy
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Executive Summary

Understanding the Early Years (UEY) is a national research initiative. It provides communities with information to enable them to make informed decisions about the best policies and most appropriate programs for families with young children. It seeks to provide information about the influence of community factors on children's early development and to improve the community's capacity to use these data in monitoring child development and creating effective community-based responses.

This report is one of twelve community reports describing children's outcomes and explaining them in terms of three factors: family background, family processes, and community factors. Studies in one pilot community and five study communities were conducted in 2000-2001. This report is based on one of seven communities studied in 2001-2002. Children's outcomes were assessed in three major categories: physical health and well-being, cognitive skills, and behavioural measures.

Each evaluation comprised several measures:

- ◆ Family background includes information on the parents' income, level of education, and occupational status;
- ◆ Family processes include positive parenting practices, engagement in learning activities, family functioning, and maternal mental health;
- ◆ Community factors include social support and social capital, neighbourhood quality and safety, use of recreational, cultural, and educational resources, and residential stability.

Data for these reports were derived from several sources:

- ◆ The National Longitudinal Survey of Children and Youth (NLSCY) Community Study is a national instrument used to gather data directly from parents and children concerning the health and well-being of Canada's children 5-6 years of age;
- ◆ The Early Development Instrument (EDI) is based on a teachers' checklist that assesses how prepared kindergarten students are for learning at school;
- ◆ The NLSCY and EDI data collected from the UEY sites allows comparison across the seven UEY communities. Where possible, the outcomes of the children in this community were compared with averages for their province and for Canada as a whole. If data were not available at those levels, the outcomes of the children are compared across the seven UEY communities of Hampton/Sussex, New Brunswick; Montreal, Quebec; Mississauga – Dixie-Bloor, Ontario; Niagara Falls, Ontario; South Eastman, Manitoba; Saskatoon, Saskatchewan; and Abbotsford, British Columbia.

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Generally, the children of Hampton/Sussex are fortunate: they live in high-quality, safe neighbourhoods with a high level of social support. Parents are engaged with their children and make use of community resources. These factors have undoubtedly contributed to success in the development of young children in Hampton/Sussex even though there are several neighbourhoods of very low socioeconomic status.

Valuable lessons have been learned from the UEY initiative about the needs and strengths of communities with different economic, social, and physical characteristics, and about how they are each working to improve their young children's outcomes. This community-based research is important because it allows a community to understand how well its youngest citizens are developing and lends insight into which factors contribute to success and warrant further consideration.

Study Highlights

About 87.3% of the children's mothers and fathers had completed high school. Compared with provincial and national averages (88.9% and 86.3% completion rates respectively), mothers in Hampton/Sussex had relatively high levels of education (90.3% completion rate). For fathers, the completion rate of 84.3% is also above the provincial and national rates (81.6% and 83.5% respectively).

Almost 16.4% of families were headed by a single parent, less than both the provincial average of 18.4% and the national average of 16.6%.

Unemployment levels in Hampton/Sussex were lower than provincial and national averages for both mothers and fathers. About 68% of mothers were working outside the home, compared with about 58.2% provincially and 64% nationally. Similarly, 94.2% of men were working outside the home, compared with 83.5% provincially and 91% nationally. The most striking demographic characteristics associated with Hampton/Sussex families are the high levels of education and employment for both parents, and the relatively low prevalence of children living in low income families (20.8%), and families headed by a single parent (16.4%).

Results based on the Early Development Instrument, a measure derived from reports by children's kindergarten teachers, indicated that children in Hampton/Sussex fare especially well in communication skills and general knowledge. They also fared well in social competence. The weak areas were language and cognitive development, and emotional health and maturity.

Findings based on direct assessments of children's cognitive development and vocabulary indicated that the children in Hampton/Sussex scored at national norms in these domains.

The relationship of family background, family processes, and community factors from the NLSCY in relation to the EDI domain scores were studied for all seven 2001-02 UEY communities together.

- ◆ The parents' level of education, whether the parents were working outside the home, social support, and use of community resources were the most important variables related to the cognitive domain.
- ◆ Positive parenting¹ was by far the most important factor explaining the outcomes in the behavioural domain, followed by the mother's mental health, and community social capital.
- ◆ Whether the child was living in a two parent or single parent family and whether the father was working outside the home were the most important variables influencing physical health and well-being.

¹ This "style" of parenting, called "authoritative" parenting, is characterized by parents monitoring their children's behaviour, being responsive to their needs, and encouraging independence with a democratic approach. It stands in contrast to "authoritarian" parenting, characterized by parents being highly controlling and somewhat harsh in their approach to discipline, and "permissive" parenting, characterized by parents being overly-indulgent and setting few limits for behaviour.

While family background was particularly important in the cognitive domain, the role of positive parenting was an especially important predictor of behaviour problems.

In all seven 2001-02 UEY communities, use of educational, cultural and recreational resources is quite low, 3.4 on a 10.0 point scale. At 3.7 on this scale, Hampton/Sussex's use of resources is higher than the average. However, the availability of resources in Hampton/Sussex is relatively low compared with other communities: the availability of educational resources was 57.9%, cultural resources was 27.8% and recreational resources was 40.5% compared with 69.2%, 50.0%, and 53.7%, for the combined NLSCY data of the seven UEY communities.

For Hampton/Sussex, the total score out of 100 for family and community indicators was 72.5, 5.3 points above the average of 67.2 for the seven 2001-02 UEY communities. Its strengths were neighbourhood factors such as residential stability and safety, social support and capital, and use of resources, and family processes, in particular parental engagement. It received no low scores on indicators of family processes or community factors.

Despite good overall development, children in Hampton/Sussex would benefit from efforts to improve their language and cognitive development, and emotional health and maturity outcomes. Relatively few children in this community are cared for during the day in formal daycare settings. Increasing high quality daycare offerings, and making them affordable to low-income families, may be the best strategy for improving language skills and their emotional health and maturity.

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I. Introduction

A. What this study is about

Understanding the Early Years (UEY) is an initiative that provides information to help strengthen the research capacity of communities to make informed decisions about the best policies and most appropriate programs to serve families with young children. It seeks to provide information about the influence of community factors on young children's development, and to enhance community capacity to use these data to monitor early childhood development and to create effective community-based supports.

There is increasing evidence to support the importance of investing in the early years of children's development. New research shows that these formative years are critical, and that the kind of nurturing and stimulation that children receive in their early years can have a major impact on the rest of their lives.

Evidence also suggests that neighbourhoods and communities where children grow and learn directly influence their development. They affect parents' ability to provide the best possible family environment, and the ability of schools to offer the best possible education.

Neighbourhoods, communities, provinces and regions across Canada differ in important ways. Therefore, gathering community-specific information about children and the places where they are raised can help the policy sector² deliver programs that are sensitive and responsive to local conditions. *Understanding the Early Years* can contribute to this process.

This report is one of twelve community research reports. Studies in one pilot community and five study communities were conducted in 2000-2001, and another seven study communities were conducted

in 2001-2002. This report presents results for Hampton/Sussex, New Brunswick, one of the seven community studies conducted in 2001-2002. Each report describes children's outcomes and explains them in terms of three factors: family background, family processes, and community factors. Children's outcomes were assessed in three major categories: physical health and well-being, cognitive skills, and behavioural measures.

Data describing the outcomes of children ages 5 and 6, as well as the family and community environments in which they live, were collected from three sources: their parents, their teachers, and from the children themselves. The data for all twelve community research reports were based on the Early Development Instrument (EDI) and the National Longitudinal Survey of Children and Youth (NLSCY) assessments. Samples were drawn in each of the communities from families with children ages 5 and 6, and the teachers, parents, and children were given the EDI and NLSCY assessments.

In order to understand the performance of the children in each community based on the EDI, the results were compared to a larger EDI sample of about 28,250 children, drawn from selected communities. Although this sample, referred to as EDI-16, is not truly national or representative, it provides a means of comparing children in this community with other 5-6 year old children. The number of children in the EDI-16 sample is different from that used in the EDI monitoring report.³

² Policy sector is broadly conceived to include families, the private and voluntary sectors, and governments at local, provincial and federal levels.

³ The EDI community monitoring report uses only EDI data. The NLSCY data are from a sample of all of the children who completed the EDI. Therefore, the numbers in the EDI report and the research report are not the same.

The results from the NLSCY assessments taken by the community children were compared with the national means, developed from the national survey, which has a nationally representative sample.

This research report provides baseline information about kindergarten children in Hampton/Sussex. While the focus of this report is on the communities of Hampton/Sussex and the programs within it, it should be noted that many programs exist for children outside of the boundaries of this study, and many children and their families may be accessing services in neighbouring communities. This should be considered when interpreting maps describing the distribution of EDI outcomes.

The first aim of this report is to assess how children fare in cognitive and behavioural outcomes and in physical health and well-being. It considers children's developmental outcomes shortly after they begin kindergarten. Where possible, the report provides provincial- and national-level information with which local conditions can be compared.

The report's second aim is to discern how important certain family and community factors are in affecting children's development, as well as to provide some indication of what actions might further improve children's outcomes in this community.

The report sets out ten indicators upon which this community can act over the next few years. If the policy sector can devise means to improve the processes associated with these indicators, it is likely that children's outcomes during the formative years will improve, as will their chances of leading healthy and fulfilling lives.

B. How the study was conducted

The information contained in this document was collected and analyzed using a variety of methods.

Two major types of information about the children were collected. The first, which considers aspects of children's development at ages 5 and 6, is comprised of five major domains:

- ◆ Physical health and well-being;
- ◆ Social competence;
- ◆ Emotional health and maturity;
- ◆ Language and cognitive development;
- ◆ Communication skills and general knowledge.

Information for this set of domains was collected by teachers, using a checklist called the Early Development Instrument (EDI), developed by Dr. Dan Offord and Dr. Magdalena Janus at the Canadian Centre for Studies of Children at Risk, McMaster University. Teachers of all kindergarten children attending public schools in Hampton/Sussex were asked to complete the checklist about the behaviours and development of each child in their class. This information was used to determine how ready the community's children, as a whole, were for school.

The second type of developmental information was collected through a survey of parents, guardians, and the children themselves. The instruments used in the National Longitudinal Survey of Children and Youth Community Study were administered to children and their parents. This was done to acquire more detailed information about the experiences of children and families in

Hampton/Sussex, as well as, measures of children's outcomes regarding their cognitive skills, pro-social behaviour and other behavioural outcomes. In addition, information regarding childcare arrangements (e.g., whether children were cared for by parents, relatives, or non-relatives, either at home or outside the home) was collected.

A random sample of 299 kindergarten children from Hampton/Sussex was selected to participate in this survey. Statistics Canada interviewers collected detailed information from and about these children using instruments from the NLSCY Community Study. The major instruments measuring children's outcomes include:

- ◆ Vocabulary Skills (Peabody Picture Vocabulary Test, Revised);
- ◆ Developmental Level (Who Am I?);
- ◆ Number Knowledge (Number Knowledge Assessment);
- ◆ Behaviour Outcomes.

The interviewers also collected information about several family and community factors that can help explain the patterns of child development in the community.

Children completed assessments that asked them to draw, print symbols (e.g., letters and words), show their understanding of quantity and number sequence, and match pictures to words that they heard. Their families provided information about their social and economic backgrounds; their children's activities and involvement in the community; their health; and their social, emotional, and behavioural development.

Because the NLSCY questionnaire is also used across the country as a national survey, the outcomes for children in this community can be compared with national data.

Inset 1: Socio-economic status

The measure of socio-economic status (SES) for the map in Figure 1.1 was derived from the 1996 Canadian Census, based on data describing enumeration areas (EAs), which represents a geographic unit of about 400 families. The measure of SES is a composite score derived from census measures of family income, level of education, and the occupational status of adults living within each enumeration area. The composite scores were standardized, such that the average score for all EAs in Canada was zero, and the standard deviation was one. With this standardization, only about one in six EAs scored below -1, (low SES shown in dark red), and about one in six scored above +1, (high SES shown in dark green). For a discussion of the SES measure derived from the Census, see Willms, J. D. (2002), *Socio-economic gradients for childhood vulnerability*. In J. D. Willms (Ed.), *Vulnerable Children: Findings from Canada's Longitudinal Study of Children and Youth*. Edmonton, AB: University of Alberta Press.

C. Why the study is of interest

Understanding the Early Years combines information about children with information about their families and the communities in which they live. This in turn, provides an understanding of the relationship between children's outcomes and the environments in which they are raised. This is important for Canada's parents and communities who want to help their children develop well. Second, it helps the individuals, institutions, and communities who work with children to understand these processes at the levels where action is often most effective, the neighbourhood and community.

This report highlights some of the key findings from the information that was collected from teachers, parents, and their children. It examines the overall development of children in kindergarten (through the Early Development Instrument) and provides a more detailed look at the outcomes of these children (through the NLSCY Community Study). It suggests some of the unique strengths from which Hampton/Sussex can work, and some challenges to overcome in continuing to build a collective commitment to ensure the health, well-being, and positive development of its young children.

D. Socio-economic status in study area

Socio-economic status (SES) is an important variable in social research because it affects a person's chances for education, income, occupation, marriage, health, friends, and even life expectancy.⁴ This report describes children's outcomes and how they are affected by family socio-economic status, family processes, and community resources. Thus, it is helpful to have an understanding of the socio-economic backgrounds of the families in this community, as well as of how these are distributed geographically across the study area.

Socio-economic status is usually quantified as a composite measure comprising income, level of education, and occupational status. Accordingly, the measure of SES used here combines the income, level of education, and occupational status of the children's parents. Other family factors, such as family structure (e.g., single- or two-parent family), or whether the mother was a teenager when the child was born, are not dimensions of SES (although they are usually correlated with SES). Additional aspects of family and community structure will be presented in Section III.

Figure 1.1 shows the distribution of socio-economic status in Hampton/Sussex. The majority of this community is of low to very low socio-economic status. While, in general, the eastern and central areas of the community are of higher SES than the western, northern, and southern sections, they are still below the national average.

Despite the relatively low socio-economic status of some sections of Hampton/Sussex, the children of these communities scored near the national averages for many outcomes measured with the EDI and the NLSCY instruments. Moreover, the analyses in the next section show that the spatial distribution of outcomes does not match SES patterns (see Figures 2.3 to 2.7). This indicates that there are many children in poor areas who are faring quite well, and children in high SES areas with rather low outcomes.

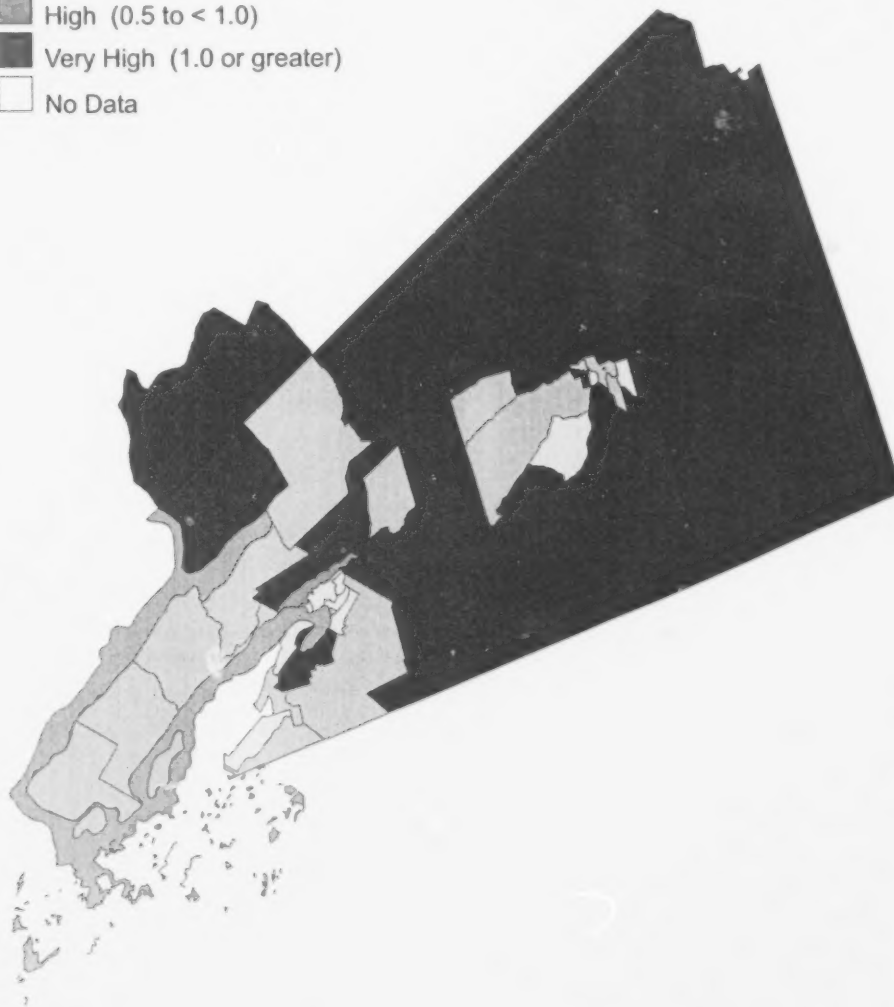
⁴ Miller, Delbert C. 1991. *Handbook of Research Design and Social Measurement*. Sage Publications, Inc. Newbury Park, CA. p. 327.

Figure 1.1 – Socio-economic status of Hampton/Sussex

SES Score

- Very Low (< -1.0)
- Low (-1.0 to < -0.5)
- Low Middle (-0.5 to < 0.0)
- High Middle (0 to < 0.5)
- High (0.5 to < 1.0)
- Very High (1.0 or greater)
- No Data

Inset: Location of Hampton/Sussex



11. The outcomes for children of Hampton/Sussex

A. How the outcomes were measured

This section provides more information about the specific measures of children's outcomes. A child's cognitive skills, behaviour, and physical health and well-being outcomes were measured in two ways, using the Early Development Instrument (EDI) and the National Longitudinal Study of Children and Youth (NLSCY) Community Study.

Five domains of the EDI (teacher report)

1. Physical health and well-being: children's motor skills, energy levels, fatigue, and clumsiness.
2. Social competence: self-confidence, tolerance, and children's ability to get along with other children, to accept responsibility for their own actions, to work independently.
3. Emotional health and maturity: children's general emotional health and maturity. It also identifies minor problems with aggression, restlessness, distractibility, or inattentiveness, as well as excessive, regular sadness.
4. Language and cognitive development: mastery of the basics of reading and writing, interest in books, and numerical skills (e.g., recognising numbers and counting).
5. Communication skills and general knowledge: children's general knowledge, their ability to articulate clearly, and their

ability to understand and communicate in English or French.

Cognitive skills (from the NLSCY - direct assessments of the child)

Vocabulary Skills (Peabody Picture Vocabulary Test, Revised - PPVT-R): assesses a child's receptive or hearing vocabulary. The children hear a word said aloud and are asked to point to one of four pictures that they believe corresponds to the word.

Developmental Level (Who Am I?): is based on copying and writing tasks, which are designed to test children's ability to conceptualize and to reconstruct a geometrical shape and to use symbolic representations, as illustrated by their understanding and use of conventional symbols such as numbers, letters, and words. Children are asked to copy five shapes (such as a circle or a diamond) and to write their names, numbers, letters, words, and a sentence. Because the tasks are not dependent on language, Who Am I? can be used to assess children whose knowledge of English or French is limited.

Number Knowledge Assessment: is designed to test the child's understanding of numbers. Children who do not have this understanding, or who are working in a language different from their mother tongue, often have difficulty mastering basic arithmetic and demonstrating number sense. The Number Knowledge Assessment evaluates children's understanding of quantity (more vs. less), their ability to count objects, their understanding of number sequence, and their ability to do simple arithmetic.

Behaviour outcomes (from NLSCY - parent report)

Measuring a child's behaviour is based on a scale administered to the person most knowledgeable about the child, which is usually the mother.⁵ The measurements comprise several questions, each with the same format. For example, the mother is asked how often her child cannot sit still, is restless, or is hyperactive. She answers with one of three possible responses - "never or not true"; "sometimes or somewhat true"; and "often or very true." The scale included the following elements:

Positive social behaviour: children who exhibit higher levels of positive social behaviour are more likely to try to help and comfort others. They may offer to help pick up objects that another child has dropped or offer to help a child who is having trouble with a difficult task. They might also invite their peers to join in a game.

Indirect aggression: this element identifies children who, when mad at someone, try to get others to dislike that person; who become friends with another for revenge; who say bad things behind the other's back; who say to others, "Let's not be with him/her"; or who tell secrets to a third person.

Hyperactivity: hyperactive children cannot sit still; are restless and are easily distracted; have trouble sticking to any activity; fidget; cannot concentrate, cannot pay attention for long; are impulsive; have difficulty waiting their turn in games or groups; or cannot settle to do anything for more than a few moments.

Emotional disorder/anxiety: this element identifies children who seem to be unhappy, sad, or depressed; are too fearful or anxious; are worried; cry a lot; tend to be rather

solitary; appear miserable, unhappy, tearful, or distressed; are not as happy as other children; are nervous, high strung, or tense; or have trouble enjoying themselves.

Physical aggression and conduct disorder: these children get into many fights. When another child accidentally hurts them (by bumping into them, for example), they assume that the other child meant to do it, and then react with anger and fighting. Also included are children who kick, bite, or hit other children; who physically attack people; and who threaten people, are cruel, or bully others.

Inset 2 - Early Development Instrument

The Early Development Instrument contained more than 70 questions, and asked teachers the following types of questions about each child in the class.

- Would you say that this child follows instructions, accepts responsibility, and works independently?
- How often is the child too tired to do school work?
- Is the child well co-ordinated?
- Would you say that this child is upset when left by a caregiver, has temper tantrums, appears worried, or cries a lot?

Teachers were asked to comment on the child's use of language, his or her interest in books, and his or her abilities related to reading and writing. They were also asked about children's communication skills and general knowledge.

⁵ Statistics Canada trained personnel conducted the parent interviews by telephone only in English or French for the NLSCY. Parents without telephones or speaking other languages were not interviewed.

B. What we learned from teachers: results of the Early Development Instrument

The children of Hampton/Sussex scored very well overall on the five domains, compared with children in the EDI-16 sample (see Table 2.1).⁶ The largest difference was in the area of Communication Skills and General Knowledge at 0.5 points above the EDI-16 average. The scores for Language and Cognitive Development were 0.3 points below the EDI-16 average, as were the scores for Emotional Health and Maturity. These appear to be the greatest areas of concern.

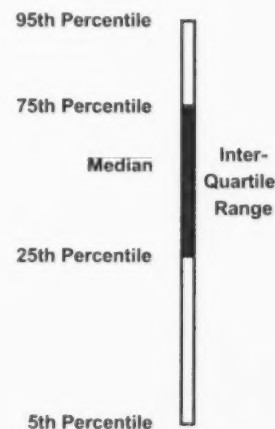
The average scores for Physical Health and Well-being and Social Competence did not differ significantly from the EDI-16 average.

Figure 2.1 displays box plots describing the distribution of EDI scores for Hampton/Sussex compared with the EDI-16 sample. The box plots show the median and percentiles for the distribution of EDI scores for each group (See Inset 3). The median is the mid-point at which 50% of the cases fall above and 50% of the cases fall below. Percentiles refer to the percentages of cases with values falling above and below the number. Ideally, a community would want to have a high median score, with relatively short blocks above and below the median. The median scores for the EDI domains for Hampton/Sussex are in some cases higher than and in some cases lower than those of the EDI-16 sample. In the areas of Physical Health and Well-Being, Emotional Health and Maturity, and Language and Cognitive Development, the median scores were slightly lower than the EDI-16 median. In the area of Social Competence, and Communication Skills and General Knowledge, the median score was quite a bit higher than the EDI-16 sample.

The range of scores is indicated by the length of the boxes.⁷ With one exception – Communication Skills and General Knowledge

– the range of scores for children in Hampton/Sussex is greater than that of the EDI-16 sample. These results confirm those in Table 2.1, and suggest further that the high average score in Communication Skills and General Knowledge is attributable mainly to a small number of children with poor skills, rather than a large number of children with exceptional skills, in this domain. In the areas of Social Competence, and Language and Cognitive Development, however, the lower overall score for the children of Hampton/Sussex is most likely attributable to the higher numbers of children with low scores.

Inset 3 – The percentile plots display the distribution of the EDI scores for each group as follows:



⁶ The EDI sample size, N=299, included valid data only. To be included in the EDI sample size for Hampton/Sussex children needed scores on at least 3 out of the 5 EDI domains. This explains why the EDI sample size (N=299) is different from the NLSCY sample size (N=294) for Hampton/Sussex.

⁷ The longer the boxes, the greater range of variability in the EDI domain scores. For example, the physical health and well-being domain has short boxes which indicates that scores were very similar to one another. In contrast, the language and cognitive development domain has long boxes which indicates that scores varied considerably, ranging from very low to very high scores.

Table 2.1 – Mean scores on the Early Development Instrument for the Hampton/Sussex UVEY community and the EDI-16

	Hampton/Sussex Community (N=294)		EDI-16 (N=28,250)	
	Mean	SD	Mean	SD
Physical Health and Well-being	8.5	1.5	8.6	1.1
Social Competence	7.6	2.3	7.5	1.5
Emotional Health and Maturity	7.6	1.9	7.9	1.5
Language and Cognitive Development	7.8	2.2	8.1	1.9
Communication Skills and General Knowledge	7.7	2.1	7.2	2.1

Note: Figures in blue text differ significantly ($p < 0.05$) from the EDI-16 sample mean.

Figure 2.1 – Box plots comparing the distribution of EDI scores for Hampton/Sussex and EDI-16

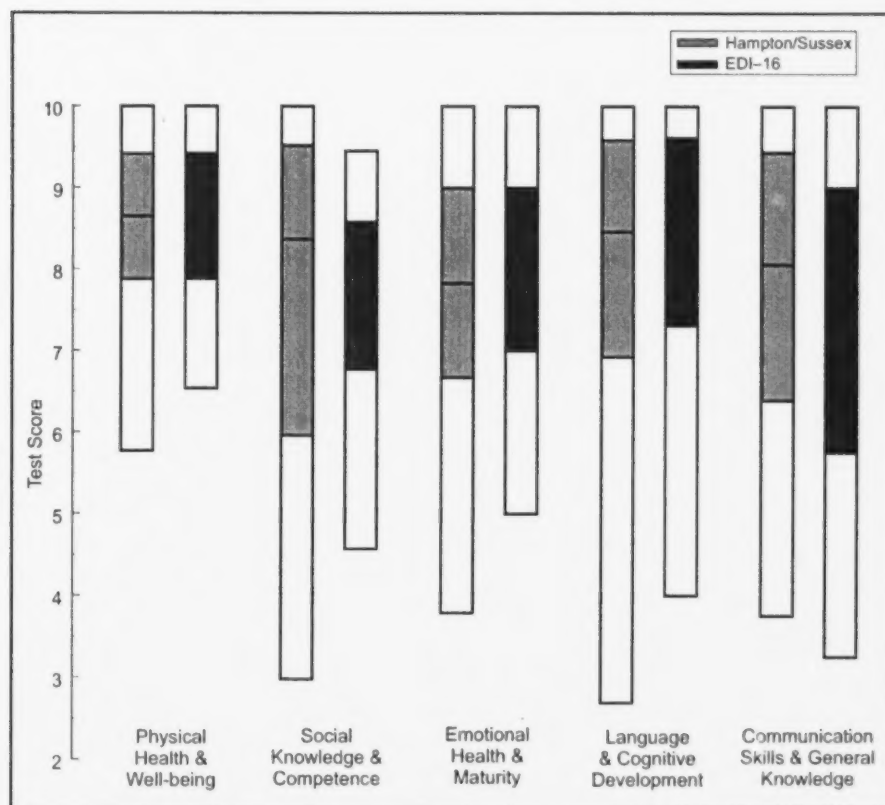
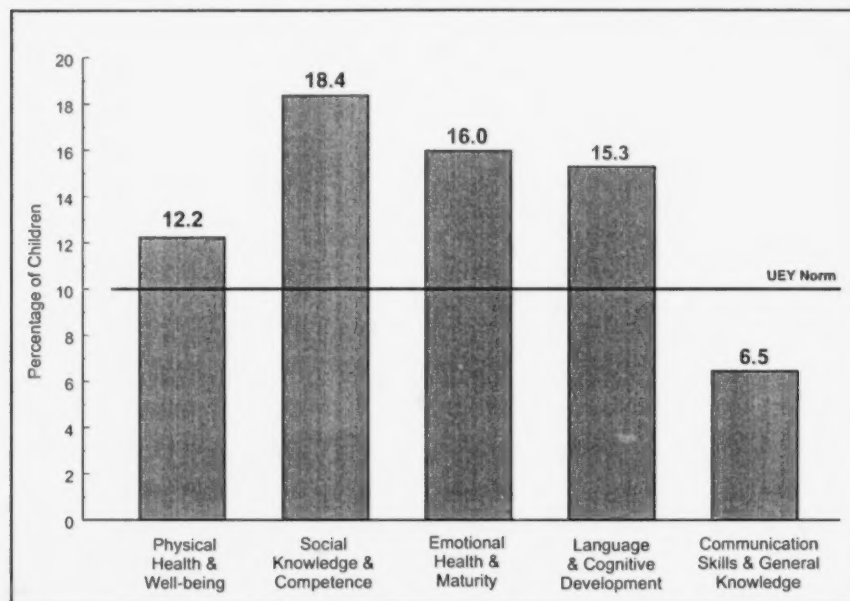


Figure 2.2 – Percentage of children with low scores on the Early Development Instrument in Hampton/Sussex



Note: Significant differences ($p < .05$) are indicated with red text.

The EDI-16 was also used to establish a "low score" threshold for each EDI domain. The low-score threshold scores were set to the tenth percentile, which means that 10% of all children scored below this score for each domain. Thus, if a community had typical results, we would expect 10% of its children to score below the same threshold scores for each domain. In Hampton/Sussex, the percentage of children with very low scores on the EDI was higher than 10% (ranging from 12.2% to 18.4%) on all of the EDI domains except Communication Skills and General Knowledge. In this domain, significantly fewer children (6.5%) in Hampton/Sussex were considered by their teachers to have low scores. This analysis shows that although the average levels of development in most domains are comparable to national domains, Hampton/Sussex has a large number of children with very low scores. In the domains of Social Competence, Emotional Health and Maturity, and Language

and Cognitive Development, the prevalence of low scores was at least one-and-one-half times that of the children in the EDI-16 sample.

The data collected as part of the *Understanding the Early Years* study included information about where each child resided. Therefore, an analysis was conducted that would give some indication of how children's scores on the EDI were distributed geographically. To achieve this, we determined the average score within each enumeration area, for each domain of the EDI. We then "smoothed" (Inset 4) the average scores for each enumeration area.

Figures 2.3 through 2.7 display the geographic distribution of the EDI scores for each of the domains. For each map, the yellow and orange areas represent scores that are just below (orange) or just above (yellow) the median score of the full EDI-16 sample.

Scores that are somewhat below the EDI-16 median are indicated in light red, and very low scores (which are comparable to the bottom 17% of the population) are shown in dark red. Similarly, relatively high scores are represented in light green, while very high scores (which are comparable to the top 17% of the population) are shown in dark green. Although the distributions vary somewhat by domain, on most domains, many of the EAs scored just above to just below the median, shown as yellow to orange areas. In general, the children in the eastern enumeration areas tended to receive higher scores than those in the western enumeration areas.

Inset 4 - Smoothing data

This is a statistical technique that involves estimating the mean score for a particular EA together with the scores for all of the EAs that are geographically contiguous (that is, those that immediately surround it). Smoothing the EDI data in this way removes some of the random fluctuation due to measurement and sampling error, thereby displaying estimates of the results we would expect if all kindergarten children in the community had participated in the EDI. Smoothing also ensures that the confidentiality of individuals, or small groups of individuals, is not compromised. For a discussion of these techniques, see Fotheringham, A. S., Charlton, M., & Brunson, C. (1997). *Measuring spatial variations in relationships with geographically weighted regression*. In M. M. Fischer & A. Getis (Eds.), *Recent developments in spatial analysis*. Heidelberg: Springer-Verlag.

Figure 2.3 – The geographic distribution of EDI scores for physical health and well-being in Hampton/Sussex

Mean Score

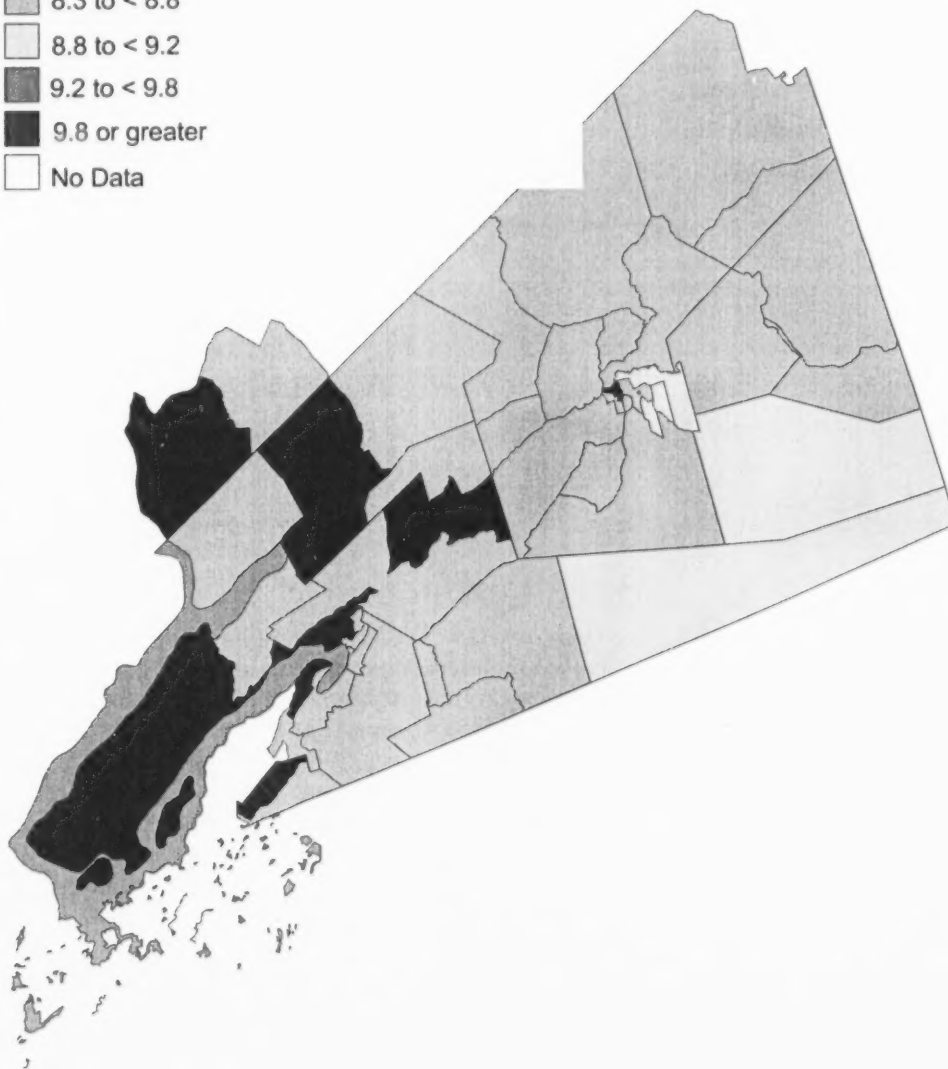
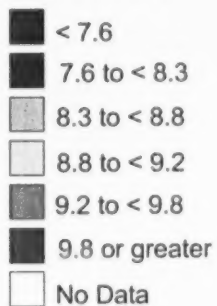


Figure 2.4 – The geographic distribution of EDI scores for social competence in Hampton/Sussex

Mean Score

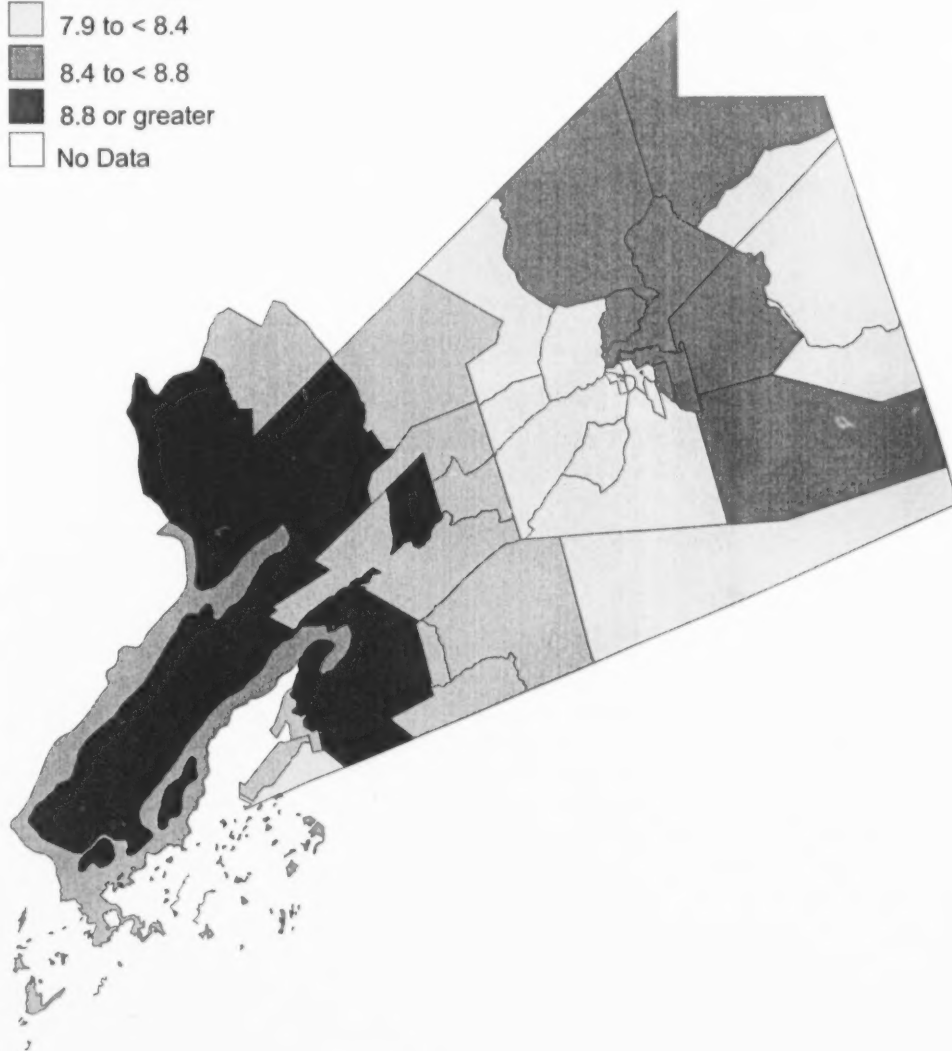
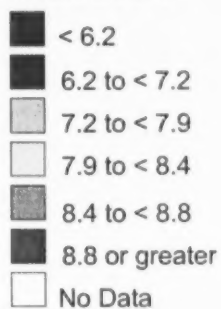


Figure 2.5 – The geographic distribution of EDI scores for emotional health and maturity in Hampton/Sussex

Mean Score

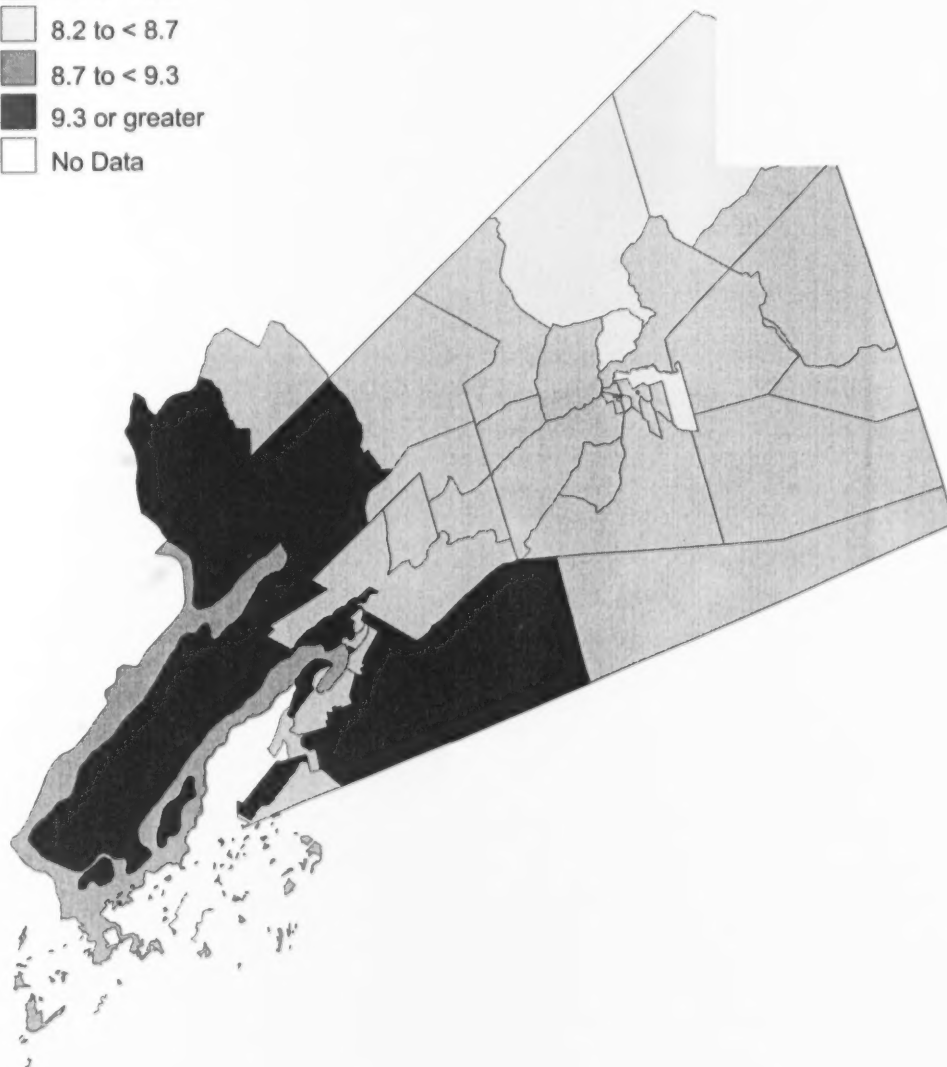
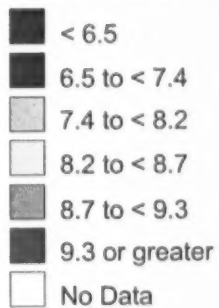


Figure 2.6 – The geographic distribution of EDI scores for language and cognitive development in Hampton/Sussex

Mean Score

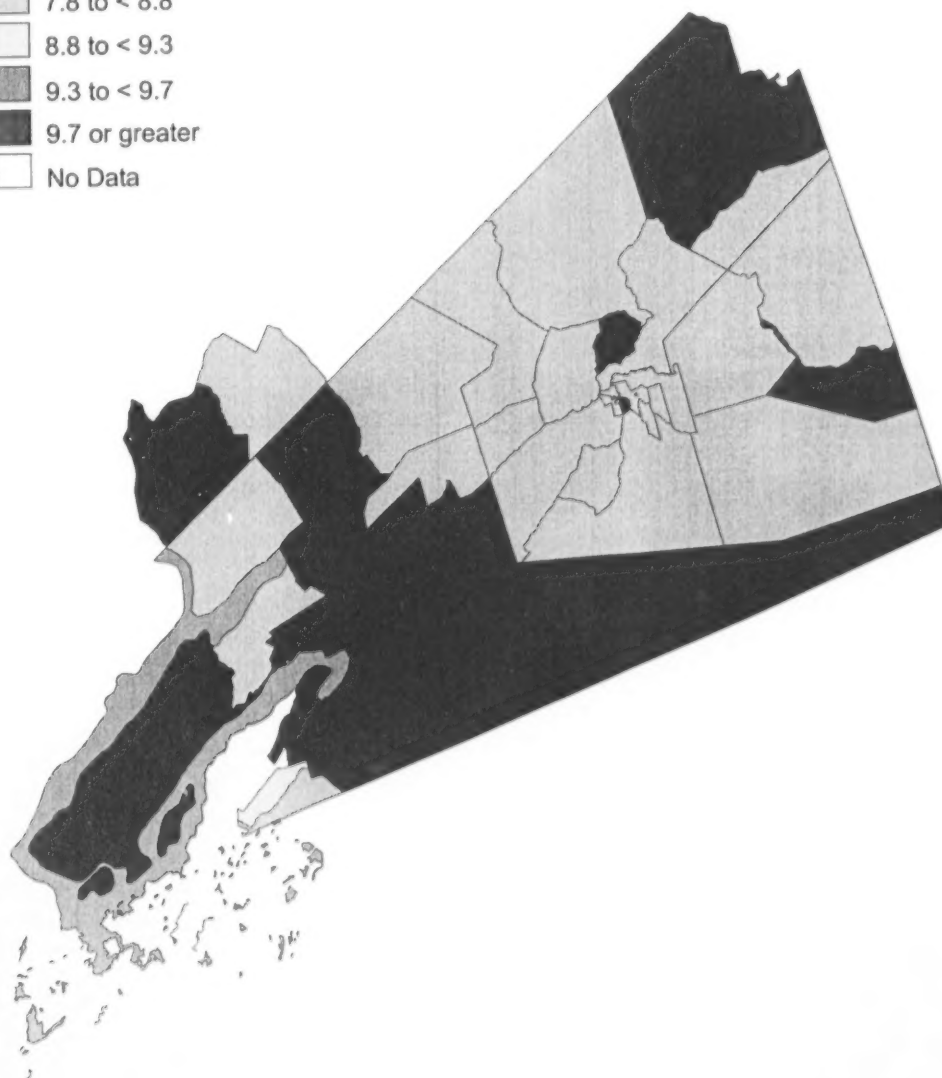
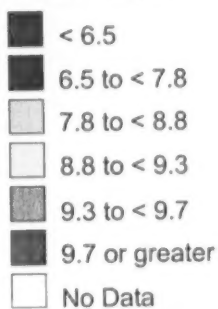
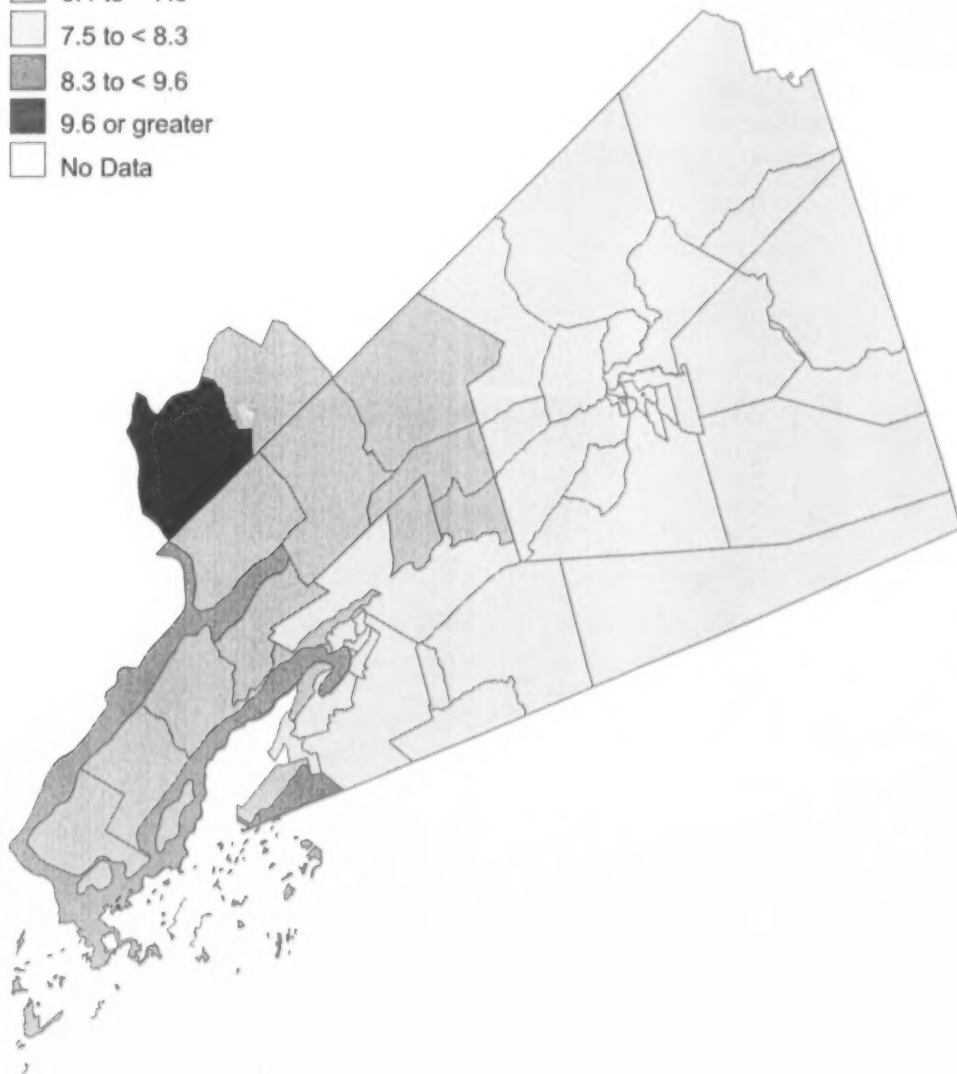
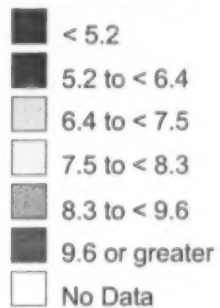


Figure 2.7 – The geographic distribution of EDI scores for communication skills and general knowledge in Hampton/Sussex

Mean Score



The map in Figure 2.3 shows that many EAs scored at or close to the EDI-16 median score (8.8) on Physical Health and Well-being. There are a few EAs in the western end of the community with lower than average scores, but no area received very low, high, or very high scores.

Figure 2.4 indicates that there is a pattern in the scores for Social Competence, from below EDI-16 median (7.9) in the west to above the median in the east.

Figure 2.5 shows a similar pattern of scores for Emotional Health and Maturity. Many EAs were close to the EDI-16 median (8.2); however, there are a few EAs with very low scores in the west, which are followed to the east by areas just below or just above the median.

Figure 2.6 shows that, with one exception, EAs in Hampton/Sussex received low or very low scores on Language and Cognitive Development. There were no EAs with average scores that were above the EDI-16 median.

Figure 2.7 indicates that most EAs scored just above or just below the EDI-16 median (7.5) on the Communication Skills and General Knowledge of the EDI. There is one EA that scored well below and one that scored well above the median.

Overall, the maps indicate that children in the areas in the west side of the study area have weaker skills than children on the east side of the city. There is a group of EAs on the western end of the study area that scored below average on all of the five EDI domains. However, what is more remarkable is that children in these communities are faring relatively well, given the low SES of many families.

C. What we learned from parents, guardians, and the children: NLSCY community study results

In this section, we discuss the results of the National Longitudinal Survey of Children and Youth Community Study, which measures children's cognitive skills, positive social behaviour, and behaviour problems.

Table 2.2 displays the means and standard deviations of scores on the Developmental Assessment (Who Am I?), on the Positive Behaviour Scale, and on the Receptive Language (PPVT-R) Test for Hampton/Sussex. Figure 2.8 displays their distributions.

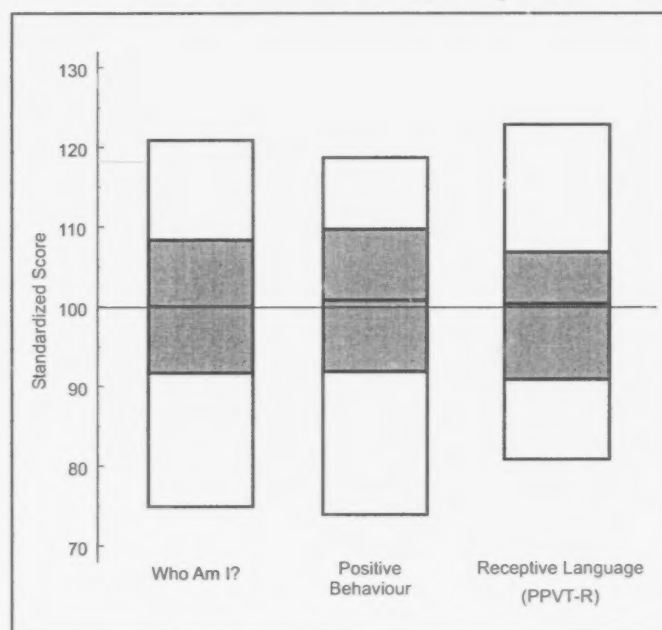
Inset 5 - For the Receptive Language Test, national norms were available, and the scores are scaled such that the national mean is 100, and the standard deviation (a measure of the spread of scores) is 15. National norms were not available for the Developmental Assessment (Who Am I?), or the Positive Behaviour Scale, but to maintain some degree of comparability, they were scaled to have a mean of 100 and a standard deviation of 15 for the entire sample of children who participated in the seven 2001-02 UEY communities (see Table 2.2).

Table 2.2 – Mean scores on the NLSCY standardized instruments for the children in Hampton/Sussex UVEY community

	Mean	Standard Deviation
Developmental Assessment (Who Am I?) (N = 283)	100.0	14.9
Positive Behaviour Scale (N = 295)	100.8	12.6
Receptive Language (PPVT-R) (N = 292)	100.1	12.6

Note: Means scores did not differ significantly from the standardized mean of 100.

Figure 2.8 – Box plots comparing the distribution of scores on the Who Am I? Positive Behaviour Scale, and the PPVT-R, for children of Hampton/Sussex



On all three tests, the children of Hampton/Sussex received scores that did not differ significantly from the 2001-02 UVEY average of 100. The average score for Hampton/Sussex on the Developmental Assessment (Who Am I?) is 100.0, which is exactly the 2001-02 UVEY average. On the Positive Behaviour Scale, the average score was 100.8, and on the Receptive Language Test, 100.1. Both of these average scores are

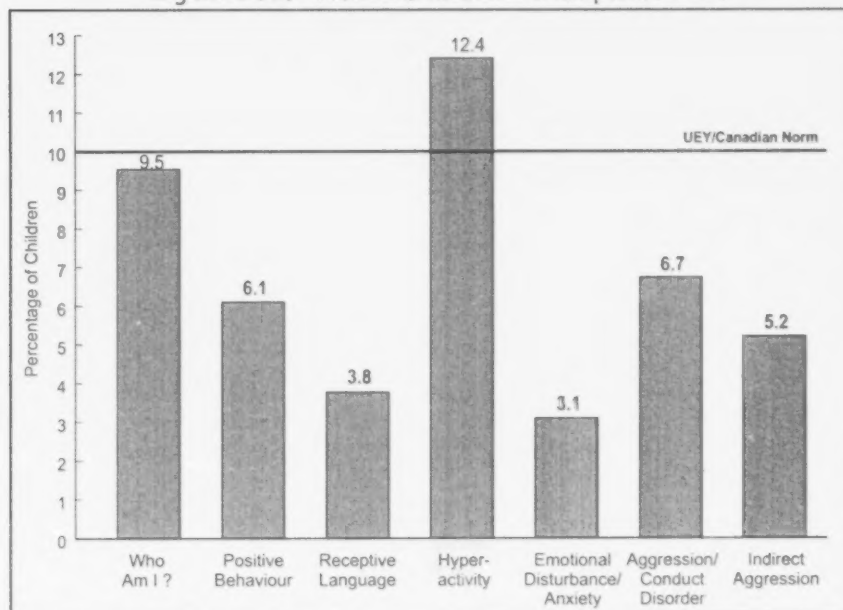
very close to national norms. On the latter two measures, the standard deviation is close to 12.0, indicating that the spread of scores is actually smaller than those in the 2001-02 UVEY sample or the NLSCY sample. The standard deviation on the Developmental Assessment (Who Am I?) was 14.9, indicating a range of scores comparable to the 2001-02 UVEY sample.

Figure 2.9 shows the prevalence of children with low scores on the Developmental Assessment (Who Am I?), the Positive Behaviour Scale, and the Receptive Language Test. It also shows the percentage of children deemed to have a behaviour problem, based on four measures of behaviour (hyperactivity, emotional disturbance/anxiety, aggression/conduct disorder, and indirect aggression).

For each measure, a score at the 10th percentile of the 2001-02 UEY sample (for the Developmental Assessment and the Positive Behaviour Scale) or the nationally

representative NLSCY sample (for the PPVT-R) was used as the threshold to define a "low score". Similarly, children with scores above the 90th percentile for the NLSCY sample on the behavioural measures were considered to have a behaviour problem. For each measure the prevalence of children in Hampton/Sussex with low scores on the three developmental assessments, and the prevalence of behaviour problems, was calculated. This allows one to compare whether the prevalence of children in Hampton/Sussex with significant problems in these areas is above or below the national norm of 10%.

Figure 2.9 – Percentage of children with low scores on the cognitive and behavioural measures (Hampton/Sussex)



Note: Significant differences ($p < .05$) are indicated with red text.

The results indicate that the prevalence of children in Hampton/Sussex with behaviour problems (emotional disturbance/anxiety, aggression/conduct disorder, indirect aggression) was significantly below the national norm fixed at 10%. The percentage of hyperactive children was slightly above the national norm, but the difference was not statistically significant. The prevalence of low-scoring children on the Developmental Assessment (Who Am I?) was below 10%, but the difference was not statistically significant. The prevalence of children with low scores on the Positive Behaviour scale and the PPVT-R were significantly below 10% (6.1% and 3.8%, respectively). Overall, this analysis suggests that very few children in Hampton/Sussex have cognitive or behaviour problems, compared with national norms.

The study also included a direct measure of a child's understanding of the system of whole numbers. Scores were classified according to developmental levels:

- ◆ Have not reached level 1;
- ◆ Reached level 1 (usually attained by 4-year-olds);
- ◆ Reached level 2 (usually attained by 6-year-olds);
- ◆ Reached level 3 (usually attained by 8-year-olds).

For all of the children who did the assessment across the seven UEY 2001-02 sites, only 1.1% had failed to reach level 1. The majority of children (42.8%) were at level 1, or had made the transition to level 2 (54.2%). Only 1.9% of the UEY children had reached level 3. These results are as expected given that the UEY children were 5 and 6 years old.

In Hampton/Sussex, 98.6% of the children sampled had either reached level 1 or had made the transition to level 2. This is above the 2001-02 UEY score of 97.0%. None of the children sampled in Hampton/Sussex had failed to reach level 1, and 1.4% had reached level 3.

Overall, the analyses in this section indicate that Hampton/Sussex has few weaknesses in early childhood outcomes. Its strengths lie in the areas of children's communication skills and general knowledge. On a measure of these skills teachers rated children above national norms. In the areas of language and cognitive development, the children of Hampton/Sussex were rated slightly below national norms, and the prevalence of children with low scores in these areas is of potential concern. This measure pertains to children's mastery of the basics of reading and writing, interest in books, and numerical skills. The majority of the children with very low scores in this domain were in the west side of the Hampton/Sussex NB UEY site. An encouraging result, however, is that the scores of the children sampled in this study virtually matched the national norms on the Receptive Language Test, Positive Behaviour Test, and Developmental Assessment. In addition, the children of Hampton/Sussex exhibited low rates of behavioural disorders. The strong performance of the children of Hampton/Sussex is noteworthy, in light of the relatively low SES observed in the previous section. Some of these results are likely attributable to family backgrounds and to various family and community factors, which are explored in the next two sections.

III. How family background affects children's preparedness for a good start in life

In this section, information about the relationship between family background and children's outcomes is presented, and the family background of the children in Hampton/Sussex is described. The relationship between family background and children's outcomes is not straightforward. An important goal of *Understanding the Early Years* is to distinguish the effects of family background, and those associated with family processes and community factors on children's outcomes. All three sets of contributing factors were measured. First, information on seven characteristics of family background are presented. In an earlier study of children's development, based on the national sample of children who participated in the first cycle of the NLSCY, these family background characteristics were significantly related to a range of children's developmental outcomes.

The values, calculated for the seven family background characteristics, are:

- ◆ Family income (in \$10,000 units): considered to be low if less than \$25,000;
- ◆ Mother's level of education: considered to be low if the mother did not complete high school;
- ◆ Father's level of education: considered to be low if the father did not complete high school;
- ◆ Mother's employment status: considered not working outside the

home if the mother worked fewer than 25 weeks during the past year;

- ◆ Father's employment status: considered not working outside the home if the father worked fewer than 25 weeks during the past year;
- ◆ Single-parent family: only one parent or guardian living at home;
- ◆ Number of brothers and sisters: the number of siblings living at home.

Figures 3.1 and 3.2 show the relative levels of income, education, employment, and single-parenthood for families in the community, as well as provincial, and national levels for 1996/97. About 20.8% of families in Hampton/Sussex were considered low income, compared with about 28.2% in New Brunswick and 22% in Canada.

The majority of the children's mothers and fathers had completed high school. Compared with provincial and national averages (88.9% and 86.3% completion rates respectively), mothers in Hampton/Sussex had relatively high levels of education (90.3% completion rate). For fathers, the completion rate of 84.3% is also above the provincial and national rates (81.6% and 83.5% respectively).

Almost 16.4% of families were headed by a single parent, less than both the provincial average of 18.4% and the national average of 16.6%.

Unemployment levels in Hampton/Sussex were lower than provincial and national averages for both mothers and fathers. About 68% of mothers were working outside the home, compared with about 58.2% provincially and 64% nationally. Similarly, 94.2% of men were working outside the home, compared with 83.5% provincially and 91% nationally. The most striking

demographic differences associated with Hampton/Sussex families are the high levels of education and employment for both parents, and the relatively low prevalence of low-income families.

The map describing the socioeconomic status of Hampton/Sussex families (Figure 1.1) indicated that in general, these communities have lower SES than national averages. However, the demographic findings in this section do not portray Hampton/Sussex as a particularly low SES area. The measure of SES used in Figure 1.1 applies to all families in these communities, while the measures in this section apply only to the families with young children. This could account for some of the discrepancy.

Also, the maps describing EDI outcomes (Figures 2.3 to 2.7) did not strongly reflect either differences in family background within these communities or between this site and others in Canada. Therefore, socio-economic and demographic factors alone do not explain why some children are better prepared than others in their cognitive and behavioural skills when they enter school.

A. The effects of family background factors on children's development

The analysis focussed on the factors contributing to whether or not a child had significantly low scores in one of the three developmental domains, these being the cognitive domain, the behavioural domain, and physical health and well-being. Children with very low scores are *at risk* of not achieving their full potential during the schooling years.

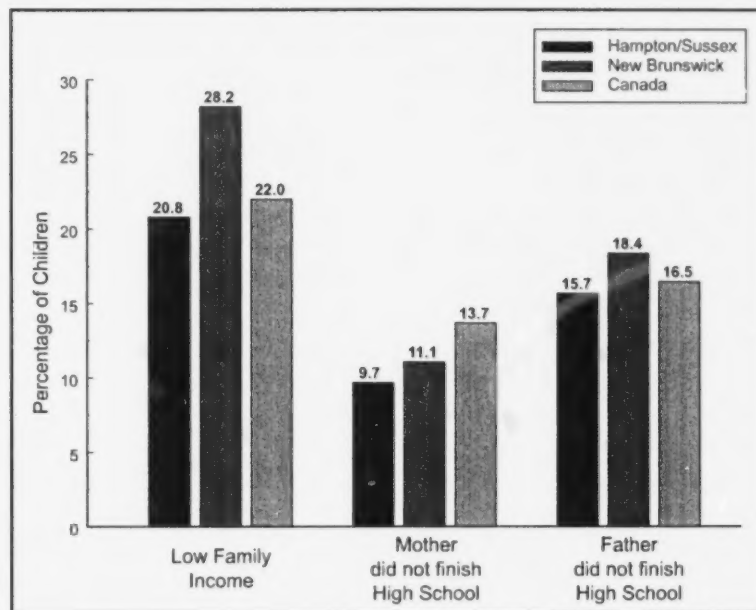
A child was considered to be at risk in the cognitive domain if he or she had a low score (i.e., below the 10% threshold) on the Receptive Vocabulary Test, the Developmental Assessment (Who Am I?), or on the two cognitive domains of the Early Development Instrument.

Similarly, a child was considered at risk in the behavioural domain if he or she had a low score on the Positive Behaviour scale or on either of the two domains of the EDI pertaining to behaviour, or had any one of the four behaviour problems.

A child was considered at risk in the physical health domain if he or she scored below the low-score threshold on the Physical Health and Well-being domain of the EDI.

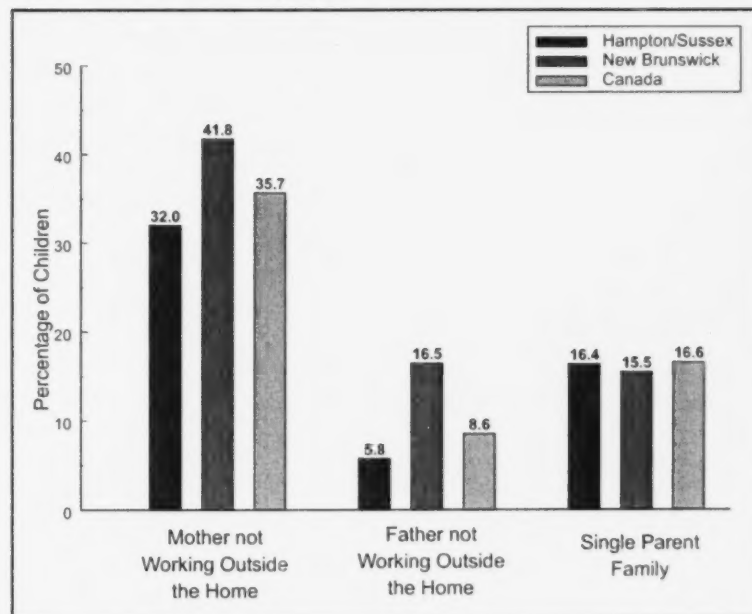
The analysis below focuses on positive outcomes, that is, it asks whether children will have a "good start in life". Children who are not vulnerable in any of the three domains are likely to have a better chance of achieving their full potential during the schooling years. Therefore, for each of the family background factors, the odds-ratio associated with whether a child was *not* at risk in these three domains was estimated (see Table 3.1) using the sample of children from all seven of the 2001-02 UEY communities. Thus, the results indicated in Table 3.1 apply to all 2001-02 communities, and are not specific to Hampton/Sussex.

Figure 3.1 – Family income and parents' education



Source: NLSCY for Hampton/Sussex and national NLSCY (cycle 3, 1996-97).

Figure 3.2 – Parents' employment and marital status



Source: NLSCY for Hampton/Sussex and national NLSCY (cycle 3, 1996-97).

Table 3.1 – Relationship between children's outcomes and family background

Odds Ratios	Children's Outcomes		
	Cognitive	Behavioural	Physical Health & Well-being
Family Income (\$10,000 units)	1.07	1.04	1.12
Mother's Education (years)	1.11	1.02	1.08
Father's Education (years)	1.08	1.03	1.12
Mother Not Working Outside the Home	0.71	0.93	0.78
Father Not Working Outside the Home	0.58	0.92	0.83
Single-Parent Family	0.73	0.71	0.65
Number of Brothers and Sisters	0.92	0.93	0.92

Source: Figures in blue text are statistically significant at $p < .10$. Results are based on the relationship of NLSY family background variables with three outcomes for the 7 UEY communities.

Inset 6 - Odds-ratios

Odds-ratios denote the ratio of the odds of an event occurring after a one-unit change in the independent variable, compared with what it had been previously, if all other independent variables in the model are held constant.

For example, suppose the outcome variable of interest was whether a child repeated Grade 1. If the odds ratio for mother's education were .95, it would indicate that the odds of a child repeating a grade decreases as his or her mother's level of education increases.

Specifically, with an increase of one year of the mother's education (e.g., 11 to 12, or 12 to 13, etc.), the odds of a child repeating a grade decreases by 5%.

When an odds-ratio is greater than 1.0, it indicates that the odds of experiencing the outcome (e.g., repeating Grade 1) are greater with increasing levels of the factor being considered.

The results indicate that family income and the educational level of the mother are important protective factors for cognitive development.

For example, the odds of not being at risk in the cognitive domain for a child living in a family with an income of \$40,000 is about 7% greater than a child who had similar background characteristics but had a family income of \$30,000. Similarly, each additional year of education of a child's mother or father increases the odds of not being at risk in the cognitive domain by about 8% to 11%.

In contrast, children whose parents were not working outside the home were more likely to be at risk in the cognitive domain, as were children living in single-parent families.

The effects of these factors were considerable: each was associated with an increase in the odds of being at risk by about 29% to 42%.

The effects of family background for the behavioural domain were consistent with the effects for cognitive development, but they were generally weaker and not statistically significant. The exception was living in a single-parent family. Children from single-parent families were on average about 29% more likely to be at risk.

These effects of family income and mother's education were similar for children's physical health and well-being: a \$10,000 increase in family income was associated with a 12% decrease in the odds of being at risk, and each additional year of a father's education was associated with a 12% decrease in the odds of being at risk. The other family background effects were not statistically significant.

These findings pertain to the relationships among developmental outcomes and family background for all families and children who participated in the seven UEY 2001-02 community studies. It is important to note that not all children in low income or single-parent families have poor developmental outcomes. Some children from low-income or single-parent families have average or above-average scores on the outcome measures used in the study. Similarly, there are some children from high-income families, and families with two parents, who did not fare well on the developmental measures. Thus, the relationships observed only indicate that a child is more likely to experience difficulties in these developmental domains if he or she is from a poor family or a single parent family.

Given these relationships between children's outcomes in these domains and family income and maternal education, and the relatively low prevalence of families with low income or low levels of education in these particular communities, the relatively strong performance of the children on some outcomes is not surprising. However, it is likely that other aspects of family and community life have also influenced children's outcomes. We examine these factors in the next section.

IV. What families and communities in Hampton/Sussex can do to improve children's outcomes

Many studies of childhood outcomes have been based on investment theory, an economic theory that supposes that children receive an endowment from their parents. This includes biological attributes and a cultural endowment determined by their parents' norms, values, and preferences; their income and wealth; and their access to resources. Parents invest time and money in their children, primarily through expenditures on education and health care.⁸

Other theories suggest that childhood outcomes result from family and parenting practices. Children are less likely to have behaviour problems or poor cognitive development if their parents are supportive, responsive, and affectionate. Also, parents who are depressed or severely stressed are more likely to be tense and irritable with their children, and become less engaged in activities that contribute to their emotional and intellectual development. Marital relations become strained, and the overall ability of the family to function as a cohesive unit becomes compromised. These pressures also affect children's development.

Recent research on vulnerable children, based on data from the first cycle of the National Longitudinal Survey of Children and Youth,⁹ considered the influence of both family processes and community factors on childhood outcomes. It found that the most important family processes included the parents' "style" of parenting, maternal depression, the cohesiveness or adaptability

of the family, and the extent to which children are regularly engaged with learning activities. Child care also plays a critical role. Many children have better outcomes if they have quality daycare, especially those from families of low socio-economic status.¹⁰

Parents' ability to provide a supportive environment can be either helped or hindered by the neighbourhood and wider community.¹¹ The quality and safety of the neighbourhood is important, but social factors also play a role. Therefore, we are also interested in the degree of social support available to parents, and the extent to which parents have access to information and support through a strong network of friends and colleagues - factors embodied in the term "social capital." Social support and high levels of social capital are easier to build in a community when the population is not transient; thus, we also expect that child development may be affected by the extent to which the population is stable.

Finally, children's development is more likely to flourish if families have access to educational, cultural and recreational resources. These are important not only because they contribute directly to children's development, but also because they foster social support and increase social capital within the community.

⁸ Becker, G. S. (1981). *A treatise on the family*. Cambridge, MA: Harvard University Press.

⁹ Willms, J. D. (2002). *Vulnerable Children: Findings from Canada's Longitudinal Study of Children and Youth*. Edmonton, AB: University of Alberta Press.

¹⁰ Kohen, D.; Hertzman, C.; & Willms, J. D. (2002). The importance of quality child care. In J. D. Willms (Ed.), *Vulnerable Children: Findings from Canada's Longitudinal Study of Children and Youth*. Edmonton, AB: University of Alberta Press.

¹¹ Brooks-Gunn, J., Duncan, G. J., Aber, J. L. (Editors) (1997). *Neighbourhood Poverty: Context and Consequences for Children*. New York: Russell Sage Foundation.

As we saw in Section II of this report, the children in Hampton/Sussex scored as well as, or better than, children in the EDI-16 sample on three of the five EDI measures, and their scores equaled national standards of performance on the NLSCY outcomes measures.

This is consistent with what one might expect, despite the overall low SES of the community because relatively few children were living in low income or poorly educated families. Factors other than those associated with their immediate socio-economic status may also be at play.

The strategy in the next analysis was to combine a large number of family and community variables into ten indicators that are essential for successful child development. These indicators had to meet two criteria:

- ◆ There had to be evidence that the indicators were related to children's developmental outcomes, either from previous literature or through analyses of the Uey and NLSCY data.
- ◆ They had to be amenable to change through the efforts and actions of families and communities, through the support of community and volunteer agencies, and through social policy at the local, provincial and national levels.

In this section, the ten indicators are described; the results of the analyses with the Uey data are presented, which give some indication of the relative importance of these factors; and the scores on these indicators for the Hampton/Sussex community are shown.

A. Ten indicators of family and community success

Each of the indicators is presented from 0 to 10, with 10 being the highest positive score.¹²

1) Positive parenting

This indicator was based on research that has shown that children have better developmental outcomes when their parents monitor their behaviour, are responsive to their needs, and encourage independence with a democratic approach.

This "style" of parenting, called "authoritative" parenting, stands in contrast to "authoritarian" parenting, characterised by parents being highly controlling and somewhat harsh in their approach to discipline, and "permissive" parenting, characterised by parents being overly-indulgent and setting few limits for behaviour.¹³

The scale includes items assessing the extent of positive interactions - how often the parents praise the child, how often they talk and play with them, and how often they laugh together. It includes items pertaining to whether parents are consistent and rational in their approach.

For example, parents were asked about situations when their child was misbehaving: were they likely to raise their voice, scold or yell at their child, calmly discuss the problem, or discuss alternate ways of behaving? Did they often have to punish their child repeatedly for the same behaviour? Did their punishment depend on the mood they were in?

2) Parental engagement

This indicator measures the extent to which parents are engaged with their child in learning activities. It includes information on

¹² This was achieved by rescaling the values for each of the Likert responses (e.g. strongly disagree, disagree, agree, strongly agree) from 0, 1, 2, 3 to 0, 3, 3, 6, 6, 10.

¹³ Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance abuse. *Journal of Early Adolescence*, 11(1), 56-95.

whether and how often parents tell stories to their children, teach them letters and numbers, teach them how to read, and encourage them to use numbers in their day-to-day activities. It also measures whether and how frequently children look at books and magazines, discuss them with their families and friends, and write or pretend to write with markers or pencils.¹⁴

3) Family functioning

The concept of family functioning refers mainly to the cohesiveness and adaptability of the family. It concerns how well the family functions as a unit, more so than the relationships between spouses or between parents and their children. A number of studies have shown that family functioning is related to children's developmental outcomes, especially children's behaviour.

In this study, it is assessed in the NLSCY with twelve items pertaining to a family's ability to communicate, make decisions and solve problems as a group, discuss feelings and concerns, get along together, and feel accepted for who they are.

4) Maternal mental health

The well-being of parents affects their parenting style and ability to respond to and engage their children in various learning activities.¹⁵ Mothers' well-being has a stronger effect on children's outcomes than fathers' well-being.

This indicator was based on twelve items in the NLSCY that are commonly used to measure depression. For example, it includes questions about whether the person regularly experiences feelings of depression and loneliness, crying spells, low energy levels, an inability to concentrate and sleep, and a sense of being disliked by others. The scores were coded such that high scores indicate

positive mental health; that is, the absence of depressed feelings.

5) Social support

The level of social support available to parents affects their well-being, and indirectly affects their ability to function as parents and as role models within their family and community.

This indicator measures the level of support available to the respondent, and describes how much support that person receives from a community of friends and family members.

To determine this, parents were asked whether they could get help in various situations, including emergencies; whether they were able to confide in and seek advice from others; whether they felt close to another person; and whether they felt they were a member of a group of people whose attitudes and beliefs they share.

6) Social capital

A separate but related indicator, social capital is a measure of the level of support available collectively to groups within a community. Thus, it comprises information about the ability of neighbours to work together to solve problems, help each other, watch out for one another's children, and provide children with role models outside their immediate families.

7) Neighbourhood quality

This indicator gauges the parents' perception of their neighbourhood as a place to raise

¹⁴ McCain, M.N., & Mustard, J.F. (1999). *Reversing the Real Brain Drain: Early Years Study Final Report*. Publications Ontario.

¹⁵ Brooks-Gunn, J., Duncan, G.J., & Britto, P.R. (1999). Are Socioeconomic Gradients for Children Similar to Those for Adults? Achievement and Health of Children in the United States. In D.P. Keating's & C. Hertzman's (Eds.) *Developmental Health and the Wealth of Nations*. The Guilford Press. New York.

children. It measures features such as cleanliness, safety, quality of schools and nursery schools, adequacy of facilities for children (such as pools and playgrounds), health facilities, and the level of involvement of residents. It also asks people to rate their present neighbourhood in comparison with the one they had lived in previously.

8) Neighbourhood safety

This indicator assesses the level of the parents' concern for children's safety in their neighbourhood. For example, parents were asked about the safety of parks and other play-spaces, crime rates, problems with older children in the neighbourhood, and whether they worried about children playing outside during the day.

9) Use of resources

This indicator measures the use of recreational facilities, including parks, trails, play-spaces, skating rinks, pools, camping areas, skiing facilities, amusement parks, and community centres; educational services, such as libraries, science centres, family resource centres, and drop-in programs; and cultural resources, such as art museums, plays, musical performances, sports events, and movies.

10) Residential stability

This factor was derived from a factor analysis of four variables measured as part of the 1996 Canadian census that assessed the degree of transience of the local population. These included the proportion of people who had moved in the past five years or the past year, as well as the percentages of single parents and elderly people in the neighbourhood. It was scaled in positive terms, such that a high score indicates greater stability. The average score for all enumeration areas in Canada is 5 on the 10-point scale.

B. The relationship between neighbourhood factors and children's outcomes

In Section III, a statistical technique called logistic regression was used to estimate the relationships between family background factors and whether a child had "a good start in life". Operationally, this meant that a child was not at risk of achieving his or her full potential because of problems in one of the three developmental domains.

In this section, that analysis is extended to include the ten family and neighbourhood factors described previously. This is a fairly conservative test of the effects of these factors, as the analysis is essentially asking, "What are the effects of these factors, after taking account of children's family backgrounds?"

As in Section III, the results are presented as odds-ratios (see the Inset in Section III).

For the ten scales describing family processes and neighbourhood factors, these provide an estimate of the effect associated with a one point increase on the respective scale.

The results, which are based on the combined data from the seven UEY communities, are presented in Table 4.1.¹⁶

¹⁶ The odds ratios in Table 4.1 differ slightly from those in Table 3.1 because community factors are correlated with family background. For example, a family with a higher income generally lives in a relatively safer neighbourhood with a higher neighbourhood quality.

Table 4.1 – The relationship between children's outcomes and family background, family processes, and community factors

Odds Ratios	Children's Outcomes		
	Cognitive	Behavioural	Physical Health & Well-being
Family Background			
Family Income (\$10,000 units)	1.02	1.00	1.08
Mother's Education (years)	1.08	1.02	1.09
Father's Education (years)	1.08	1.03	1.06
Mother Not Working Outside the Home	0.74	0.97	0.68
Father Not Working Outside the Home	0.58	0.68	0.45
Single-Parent Family	0.72	0.75	0.59
Number of Brothers and Sisters	0.94	0.96	0.92
Family Processes			
Positive Parenting Practices	1.05	2.08	1.16
Engagement in Learning Activities	1.01	0.98	1.05
Family Functioning	1.02	1.05	0.99
Maternal Mental Health	1.04	1.24	1.08
Community Factors			
Social Support	1.14	0.94	0.93
Neighbourhood Quality	1.00	1.00	1.06
Safe Neighbourhood	1.06	1.03	1.02
Social Capital	0.97	1.08	1.01
Use of Resources	1.18	0.98	1.02
Residential Stability	1.01	1.02	0.88

Note: Figures in blue text are statistically significant at $p < .10$. Results are based on the relationship of NLSCY family background variables with three developmental outcomes for the 7 UEY 2001/02 communities.

Of the ten family and community factors, two have statistically significant relationships with the cognitive domain: social support and use of community resources. The results for social support suggest that a child in a family with a rating of 6.0 on the 10-point scale would be 14% less likely to be at risk in the cognitive domain than a child living in a family with a rating of 5.0 (or a family rated 5.0 instead of 4.0, etc.).

An increase of one point in "use of community resources" was associated with an 18% increase in cognitive scores. In other words,

families that make use of various recreation, educational, and leisure facilities, such as pools, play-spaces, libraries, drop-in programs, art museums, and movies, have children with better cognitive scores.

For the behavioural domain, positive parenting was by far the most important factor. A one point increase on the positive parenting scale was associated with a 108% increased likelihood in good behavioural outcomes. This means that parents who monitor children's behaviour, are responsive to their needs, and encourage independence, are much more

likely (more than twice as much) to have children without behaviour problems.

Two other factors had statistically significant and positive effects: the mental health of the mother, and social capital. An increase of one point on the ten-point scale for maternal mental health was associated with a 24% increased likelihood in a child not being at risk due to problems in the behavioural domain. Living in a neighbourhood with a high level of social capital was associated with an increase of 8% in the odds of a positive outcome in the behavioural domain.

Social support had effects contrary to expectations. This may have arisen because parents whose children have behavioural problems may be more aware of the social support available to them, and therefore reported higher levels of support.

Finally, for physical health and well-being, none of the family or community factors were statistically significant protective factors. Residential stability had effects that were contrary to expectations, suggesting that children living in neighbourhoods with a higher percentage of transient families were less likely to have health problems. One should note that the model controls for whether the child was living in a single-parent family, which may have captured some of the negative effect normally associated with transient families.

C. Community indicator scores for Hampton/Sussex

Figure 4.1 displays Hampton/Sussex scores for each of the ten indicators described in this section. The figures in parentheses indicate the average scores for the seven 2001-02 UEY communities.

On virtually every indicator of family

processes and community factors, Hampton/Sussex scored above the average for the seven 2001-02 UEY communities. In eight of the ten instances, the differences were statistically significant.

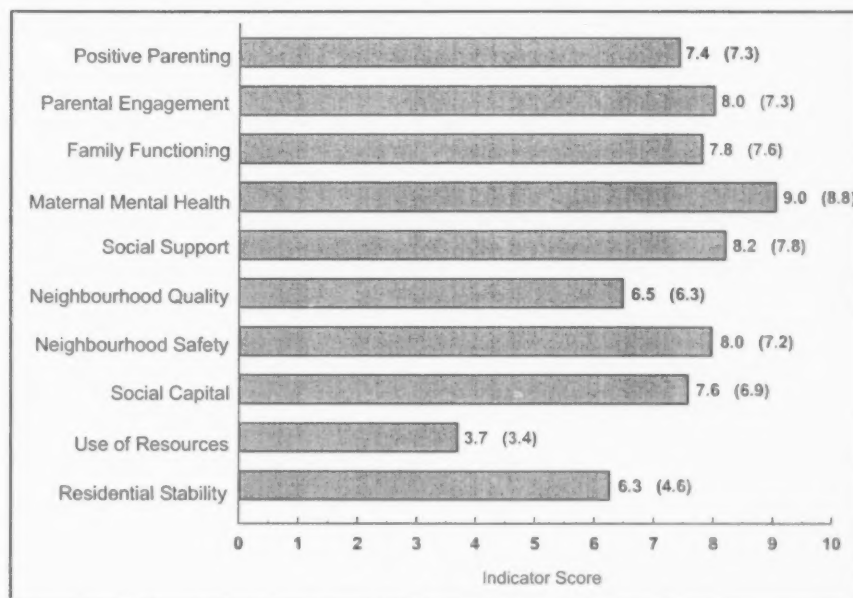
Parents gave their neighbourhoods high ratings: Hampton/Sussex's scores were 1.7 points above UEY norms for residential stability, 0.8 points above average for neighbourhood safety and 0.2 points above average for neighbourhood quality. Likewise, high levels of social capital (+0.7) and social support (+0.4) were reported for this site.

In addition, parents in Hampton/Sussex reported strong parenting skills and well-functioning families. Parental engagement was reported at 0.7 points above the 2001-02 UEY norms, and positive parenting (+0.1), family functioning (+0.2), and maternal mental health (+0.2) were also above the norms. Finally, at +0.3 points above UEY 2001-02 averages, resources were comparatively well used in these communities.

As described, there are ten indicators of family and community success. Each indicator scale has a range from 0 to 10, with 10 being a positive score. A total score out of 100 can be calculated for each community. The total score out of 100 for Hampton/Sussex is 72.5, which is 5.3 points above the average of 67.2 for the seven 2001-02 UEY communities.

Because of the relatively low average scores in all seven 2000-01 UEY communities on the use of resources, this variable was further explored in each community to determine whether the problem stems mainly from a lack of availability of the resources. For each of the three types of resources, parents were asked, "Are most of these resources located

Figure 4.1 – Community indicator scores for Hampton/Sussex



Source: Mean scores in red text differ significantly ($p < 0.05$) from the average score across the seven UY sites (in parentheses).

within walking distance or within a short drive or bus ride?" The results for Hampton/Sussex, presented in Figure 4.2, indicate that the children of these communities have lower than average access to all three types of resources, making their higher than average use of resources particularly impressive.

The NLSCY data also covered daycare. Early childhood programs, such as those offered at daycare, can increase a child's potential to learn, thereby enhancing his or her lifelong academic and personal development.

But for these programs to be effective, they need to be developmentally appropriate and responsive to the experiences, backgrounds and needs of the children.¹⁷ Research suggests that, regardless of a child's socioeconomic status, four types of resources contribute to optimal child development:

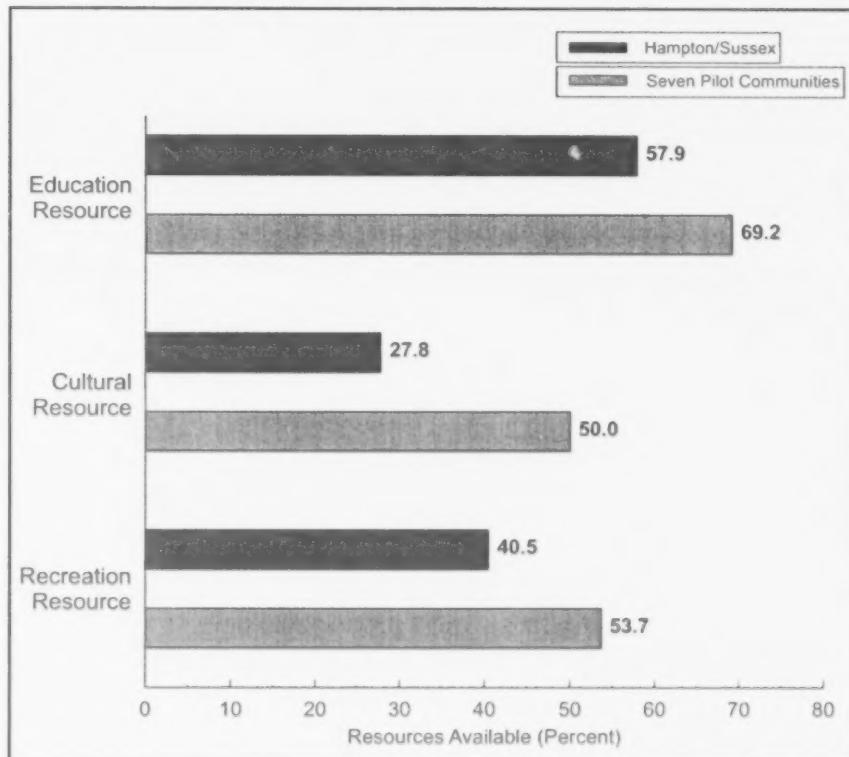
childcare centres, pre-schools, nursery schools, and kindergartens.

Moreover, research based on the first cycle of the NLSCY suggests that receiving daycare, either licensed or unlicensed, has positive effects on the language skills of children from low-income families. However, children from relatively affluent families tend to fare equally well across various types of care arrangements.¹⁸

¹⁷ Doherty, G. (1997). Zero to six: the base for school readiness. Hull, Quebec: Human Resources Development Canada, Strategic Policy, Applied Research Branch Research paper R-97-8E.

¹⁸ Kohen, D., Hertzman, C., & Willms, J. D. (2002). The importance of quality child care. In J. D. Willms (Ed.), *Vulnerable Children: Findings from Canada's National Longitudinal Study of Children and Youth*. University of Alberta Press, Edmonton.

Figure 4.2 – Availability of Resources for Hampton/Sussex and the seven 2000-01 UVEY communities



Source: NLSCY for Hampton/Sussex (EDI) and national NLSCY data (cycle 3).

In 1996-97, according to NLSCY, nearly one half (43.4%) of the population of 5- and 6-year-old children in Canada received care for at least part of the day by someone other than their parents. In Hampton/Sussex, 44.5% of the children received care by someone other than their parents, which is just above the Canadian average of 43.4%.

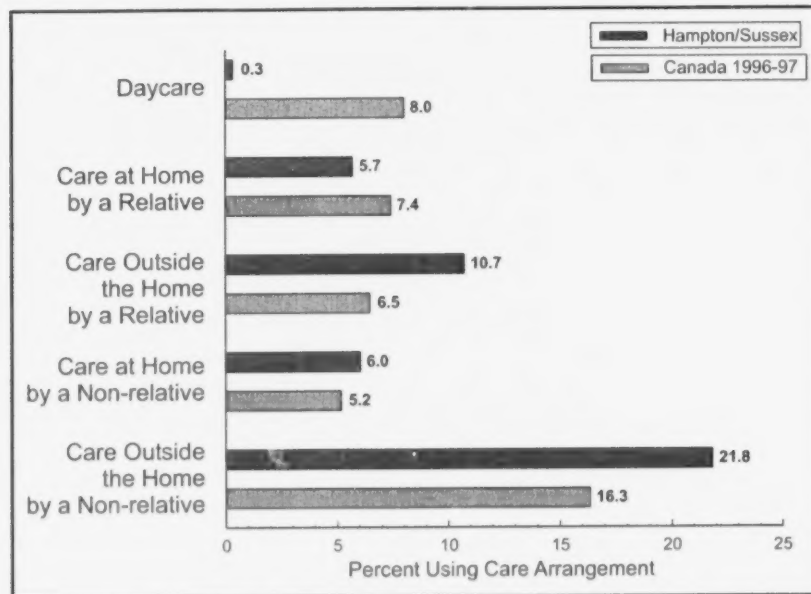
Figure 4.3 displays the percentage of children in differing types of care arrangements for the Hampton/Sussex community, compared with the figures for Canada for 1996-97, derived from NLSCY.

Less than 1% of the children in this community received formal daycare, compared with

8% of children living elsewhere in Canada; whereas 10.7% received care outside the home by a relative, compared to 6.5% nationally. About 22% of the children in this community were cared for outside the home by a non-relative, exceeding the national average of 16.3%, the most popular type of care arrangement in Canada.

To summarise, Hampton/Sussex has a number of strengths. It has high quality neighbourhoods, and parents report high levels of social support. It has a relatively low level of children's resources, but families tend to make better use of them than in other communities in the UVEY 2001-02 study.

Figure 4.3 – Types of care arrangements for children in Hampton/Sussex



Source: NLSCY for Hampton/Sussex (EDI) and national NLSCY data (cycle 3).

V. Looking forward

Overall, the children of Hampton/Sussex showed strong signs of positive development and readiness for learning. The communities are comprised of high quality and safe neighbourhoods, even though there are a number of neighbourhoods of low socioeconomic status. Families in Hampton/Sussex have a relatively low availability of resources for children, but families make more use of them. These factors undoubtedly contribute to Hampton/Sussex's success in preparing children for school.

Although many Canadian communities share at least some of these broader characteristics, each community also exhibits a variety of unique features that sets it apart from others.

This is one of the reasons community-based research is so important. Research allows a community to understand how well its youngest citizens are developing and lends insight into how the obtained results came about. Investments for families and children, as well as for children's development, can be monitored over time so that effectiveness and efficiency of community effort can be improved.

This community can take pride in the success of its youngest children. Children were directly administered two assessments, one pertaining to their overall development and the other to their receptive vocabulary. On these tests, their scores were virtually identical to national norms. These results, however, are inconsistent with teachers' rating using the EDI, which indicated lower-than-average performance in emotional health and maturity, and language and cognitive development. Also, a large number of children were considered to have very low scores in these two domains, as well as in social competence. This may mean that

the teachers have relatively high expectations, which can be positive. But it may also be a signal that there are several children who could benefit from interventions in these areas.

A. What makes Hampton/Sussex unique?

Several features of Hampton/Sussex stand out as unique. First, its children have scores on the developmental assessment and receptive vocabulary which are very close to national norms, even though Hampton/Sussex is a relatively low SES community. Second, Hampton/Sussex received very high ratings from parents on measures of both family and community processes. Hampton/Sussex's scores on eight of the ten measures were above the average of all 2001-02 UEY communities. Third, although the families in Hampton/Sussex made relatively good use of community resources, families had poor access to resources compared with other communities.

B. Summary

Hampton/Sussex is one of twelve communities participating in the UEY initiative. Through this initiative, valuable lessons are being learned about the needs and strengths of communities with different economic, social, and physical characteristics. With respect to early childhood development, we are also learning how they are working to improve children's outcomes, as well as the relative success (or lack thereof) of their efforts.

Communities will determine how their citizens will work together to improve children's early developmental outcomes based on research evidence. Results from the UEY initiative will inform the discussion in the community for future action plans.

At the same time, it is a societal responsibility - of governments, educators, community agencies, neighbourhoods, and families - to make sure improvements take place for all children. Strategies that require the community to look at itself as a whole community, as well as neighbourhood by neighbourhood, will likely have more enduring effects. UEY is able to provide research results to support both.

For example, neighbourhood by neighbourhood, families may improve their outdoor play-spaces, and on a community level, concerned agencies and organisations could improve community-wide strategies to integrate disadvantaged groups. As communities document their efforts, as well as their results, effective practices will be identified.

Any community's response must consider its unique features. The importance of a coordinated approach involving families, teachers, and all community members must be emphasised because each has been shown to be important in enhancing a child's development. Governments, community institutions, schools, and the voluntary sector in Hampton/Sussex must continue to work together, as each can make a valuable and important contribution. Support for families with children from the larger community network is critical.